

crosslinked to form an organic polymer layer.

A₆ 21. A material as claimed in claim 2 having a general formula $X'_2.M_mO_{3m+1}$ wherein M is the metal, and X' is an organic cation and m=1, 2, 3.

A₇ 23. A material as claimed in claim 21 wherein the configuration of organic layer relative to the inorganic layer is staggered.

A₈ 28. A material as claimed in claim 25 wherein one or both organic cation is an aromatic ammonium cation.

A₉ 30. A material as claimed in claim 28 in which adjacent aromatic rings are crosslinked to form an organic polymer layer.

A₁₀ 32. A material as claimed in claim 1 wherein dopants are introduced into the structure.

36. A material of claim 1 in which M is partially or fully substituted by a magnetic transition metal ion so as to display magnetically ordered states.

A₁₁ 37. An organic/inorganic oxide material of claim 1 in which the oxide layer comprising Mo_4 , M_2O_7 or M_mO_{3m+1} is wholly replaced by any of the following oxide layers CuO_2 , NiO_2 , CoO_2 , CuO_2CaCuO_2 , $Ca_{m-1}Cu_mO_{2m}$, m=1, 2, 3,..., NiO_2CaNiO_2 , $Ca_{m-1}Ni_mO_{2m}$, m=1, 2, 3,..., square pyramidal MnO_3 , square pyramidal RuO_3 , octahedral RuO_4 , O-Mn₂-Y-MnO₂-O, O-MnO₂-Ca-MnO₂-O, O-RuO₂-YRuO₂-O, or O-RuO₂-Ca-RuO₂-O.